

526 Rec'd PCT/PTO 25 MAY 2000

FORM PCT/199 (REV 10-93)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				P-9904 S	
INTERNATIONAL APPLICATION NO. PCT/JP99/005290		INTERNATIONAL FILING DATE September 28, 1999		U.S. APPLICATION NO. (if known, see 37 CFR 1.3) 09/555233 (NO 15 OFFICE)	
TITLE OF INVENTION Network System					
APPLICANT(S) FOR DO/EO/US Akitoshi KOJIMA					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<ol style="list-style-type: none"> <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1). <input type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau). <input checked="" type="checkbox"/> has been transmitted by the International Bureau. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)). <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau). <input type="checkbox"/> have been transmitted by the International Bureau. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. <input type="checkbox"/> have not been made and will not be made. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)). 					
Items 11. to 16. below concern document(s) or information included:					
<ol style="list-style-type: none"> <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. -- Information Disclosure Statement, Information Disclosure Citation, and copies of 14 patent documents. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. <input type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. <input type="checkbox"/> A substitute specification. <input type="checkbox"/> A change of power of attorney and/or address letter. <input type="checkbox"/> Other items or information: 					

U.S. APPLICATION NO. 09-555223 (NO. PHONE)		INTERNATIONAL APPLICATION NO. PCT/JP99/05290		ATTORNEY'S DOCKET NUMBER P-9904 S	
17. <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) : \$840.00					
Search Report has been prepared by the EPO or JPO \$380.00					
International preliminary examination fee paid to USPTO (37 CFR 1.482) \$680.00					
No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) \$750.00					
Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$1010.00					
International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) \$94.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$ 840.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input checked="" type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$ 130.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	11 - 20 =	0	X \$22.00	\$ 0	
Independent claims	4 - 3 =	1	X \$78.00	\$ 78.00	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$250.00	\$ 0	
TOTAL OF ABOVE CALCULATIONS =				\$ 1,048.00	
Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).				\$ N/A	
SUBTOTAL =				\$ 1,048.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$ 0	
TOTAL NATIONAL FEE =				\$ 1,048.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +				\$ 0	
TOTAL FEES ENCLOSED =				\$ 1,048.00	
				Amount to be: refunded	\$
				charged	\$

a. ☒ A check in the amount of \$ 1,048.00 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 10-0100. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Myron Greenspan, Esq.
Lackenspan Siegel
One Chase Road
Scarsdale, NY 10583
Telephone: 914 723 4300

SIGNATURE:

Myron Greenspan

NAME

25,680

REGISTRATION NUMBER

TITLE OF THE INVENTION

NETWORK SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

This is a Continuation of Application

5 PCT/JP99/05290, filed September 28, 1999.

This application is based upon and claims the benefit of priority from the prior Japanese Patent Application No. 10-274082, filed September 28, 1998, the entire contents of which are incorporated herein by
10 reference.

BACKGROUND OF THE INVENTION

The present invention relates to a network system such as the Internet and, more particularly, to user authentication required when a user connects with
15 a network.

Recently, electronic mail, information providing service, and network shopping using the Internet have been widely performed in accordance with the widespread use of personal computers and the maintenance and
20 expansion of network environment.

A user has to connect a user terminal to the Internet in order to send and receive e-mail, browse information, and do network shopping. It is however difficult for the user to directly connect the user
25 terminal to the Internet. Usually he or she connects the terminal thereto through an access point of an Internet service provider.

0955233.071300

The above connection states will be described with reference to FIG. 1. Access points (APs) 4A₁, 4A₂, ...; 4B₁, ... proper to Internet service providers (ISPs) 6A, 6B, ... are connected to the Internet 2.

5 In most cases, the Internet connect rate depends on connect time regardless of distance, whereas the connect rate between an access point AP and a user terminal is based on an ordinary telephone charge system. It is thus general that the access point AP
10 is located for each area (area code) in order to lower a user charge. The Internet service provider ISP is constituted of an authentication server, a mail server, a domain name server, a gateway and the like. A WWW server 10 for providing a home page is also connected
15 to the Internet 2.

The access points APs have a function of connecting user terminals 8A₁, 8A₂, ..., which make a contract with their respective providers, to the Internet 2. If an access request is issued from a user terminal,
20 the provider performs authentication using the authentication server to determine whether the user who is gaining access to the Internet is a regular one or not under contract with the provider. The user terminals 8A₁, 8A₂, ... under contract can be connected to the
25 Internet through the access points 4A₁, 4A₂, ..., whereas they cannot be done through the access point 4B₁ of Internet service provider 6B because they do not

09555233.071300

contract themselves to the provider 6B.

Recently, various types of portable user terminal have been developed. Not only a user uses a terminal fixedly installed in an office, but also he or she sometimes wish to get access to the Internet using a portable terminal even when he or she is out or on a business trip. If there are no access points of an Internet service provider to which a user makes a contract near the user, he or she has to connect his or her terminal to the Internet through a remote access point. Since, in this case, a telephone charge increases, the user wishes to temporarily utilize an access point of another nearby Internet service provider to connect with the Internet. Even though an access point of an Internet service provider to which a user makes a contract is near the user, if the access point is busy, he or she wishes to temporarily utilize an access point of another Internet service provider to connect with the Internet. The Internet connection capabilities of Internet service providers are not uniform but vary from provider to provider. It is thus desired that an Internet service provider be selected according to its intended use. When an access point of an Internet service provider to which a user makes a contract is busy, it is sometimes preferable that the user temporarily uses an access point of another Internet service provider.

09555233.071300

Conventionally, in order to count the above problem, each user had to contract with a few Internet service providers on an individual basis and pay a basic rate for each provider regardless of whether it was used or not, which became a significant economical burden to the user. What a user contracts with a plurality of Internet service providers means that a plurality of user IDs (electronic mail addresses) and a plurality of passwords are set. In addition to the economical problem, there were a number of inconveniences in which a user had to set a user terminal (dialup connection) for each Internet service provider and could not manage the mail in a batch because of a plurality of mail addresses.

In a conventional electronic mail address, as shown in FIG. 2, alphanumerics X02AT4375 were arranged as a user name before a domain name PATENT.COM (to the left of the @ sign) in accordance with the provisions of an Internet service provider. Such an unfamiliar, hard-to-remember user name was automatically added to the mail address. Though a user name can be registered as he or she wishes, if the same user name has been registered, the user has to prepare another user name and register it again, which is a very troublesome operation.

An object of the present invention is to provide a network system in which a user is able to connect

09555233.071300

with a network selectively using access points of a number of Internet service providers only if the user contracts with one Internet service provider.

Another object of the present invention is to
5 provide an Internet connection apparatus capable of connecting with a network by performing user authentication even at the request of not only a regular user contracting with a provider but also a user contracting with another provider cooperating with the provider of
10 the regular user.

Still another object of the present invention is to provide an electronic mail address determination system capable of providing a user with an electronic mail address including a user name as the user wishes.

15 BRIEF SUMMARY OF THE INVENTION

In a network system according to the present invention comprising a plurality of individual service providers each having own access points, and a parallel service provider connected to the plurality of
20 individual service providers and including an authentication server, when the access point of the individual service providers receives a connection request from a user who contracts with the parallel service provider, the individual service provider causes the
25 authentication server to perform user authentication and connect the user to a network through the access point in accordance with a result of the

09555233.071300

authentication.

Preferably, the user who contracts with the parallel service provider sends a connection request containing a domain name of the parallel service provider to the access point, and the access point determines whether the user contracts with the parallel service provider in accordance with presence or absence of the domain name. The parallel service provider is connected to the plurality of individual service providers through an exclusive line. The plurality of individual service providers send respective user connection recordings to the parallel service provider.

A network connecting method according to the present invention comprises sending a connection request from a user to an access point of any one of a plurality of individual service providers, determining by the access point whether the user is a member of an individual service provider including the access point or a member of a parallel service provider that contracts with the plurality of individual service providers, executing user authentication processing by the access point itself when the user is a member of the individual service provider, and connecting the user to a network in accordance with a result of the authentication processing, and causing the parallel service provider to execute user authentication processing by the access point when the user is a

09555233.071300

member of the parallel service provider, and connecting the user to the network in accordance with a result of the authentication processing.

5 Preferably, the user who contracts with the parallel service provider sends a connection request containing a domain name of the parallel service provider to the access point, and the access point determines whether the user contracts with the parallel service provider in accordance with presence or absence
10 of the domain name. The plurality of individual service providers send respective user connection recordings to the parallel service provider.

15 An electronic mail address determination system according to the present invention, comprises means for, when a user name is input, determining whether an electronic mail address including a combination of the user name and any one of a plurality of predetermined sub-domains has been registered, and means for, when the electronic mail address has been registered,
20 determining an electronic mail address including a combination of the user name and another sub-domain has been registered, whereby setting an electronic mail address including a combination of a sub-domain not registered and a user name.

25 A network connection device according to the present invention comprises means for, when a connection request is issued from a user, determining

09555233 071300

whether the user is a regular member of a provider with which the user contracts or a partnership member under a given contract with the provider, means for, when the user is a regular member, executing user authentication processing and connecting the user to a network in accordance with a result of the authentication processing, and means for, when the user is a partnership member, transferring a connection request to a specified authentication server, and executing user authentication processing and connecting the user to the network in accordance with a result of the authentication processing.

Preferably, the partnership member includes a predetermined domain name in the connection request, and the determining means determines whether the user is the partnership member in accordance with presence or absence of the predetermined domain name in the connection request. The specified authentication server is connected to network connection devices of a plurality of companies and used in common.

Additional objects and advantages of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by practice of the invention. The objects and advantages of the invention may be realized and obtained by means of the instrumentalities and combinations particularly pointed out hereinafter.

09555233.071300

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate presently preferred embodiments of the invention, and together with the general description given above and the detailed description of the preferred embodiments given below, serve to explain the principles of the invention.

FIG. 1 is a diagram showing a configuration of a prior art Internet system;

FIG. 2 is a diagram showing a mail address of the prior art Internet mail;

FIG. 3 is a diagram showing a configuration of a network system according to one embodiment of the present invention;

FIG. 4 is a diagram showing an example of setting an electronic mail address in the one embodiment of the present invention; and

FIG. 5 is a flowchart showing a flow of processing performed in connecting with the Internet in the one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Hereinafter a network system according to an embodiment of the present invention will be described.

FIG. 3 illustrates a configuration of the Internet according to the embodiment of the present invention.

Access points (APs) 20A₁, 20A₂, ...; 20B₁, ...;

0555233 071300

20C₁, ... belonging to Internet service providers
(hereinafter referred to as individual ISPs) 14A, 14B,
14C, ... are connected to the Internet 12. The access
points APs have a function of connecting user terminals
5 50, 52, ... contracting with the ISPs to the Internet
12 and a roaming function of connecting the user
terminals 50, 52, ... contracting with a parallel
Internet service provider (parallel ISP) 16, which will
be described later, to the Internet 12. The parallel
10 ISP 16 is the same as the normal ISPs 14A, 14B, ...
except that it has no access points for connection with
the Internet. The parallel ISP 16 and normal ISPs 14A,
14B, ... can be connected to each other by means of the
Internet, but it is preferable that they be connected
15 through an exclusive line from a security standpoint.
The parallel ISP 16 makes a so-called roaming contract
with the individual ISPs 14A, 14B, This contract
contains an agreement that when a user of the parallel
ISP 16 uses the access points of the individual ISPs
20 14A, 14B, ..., the parallel ISP 16 pays the user charge
instead of the user.

The individual ISPs 14A, 14B, ... include
an authentication server 22, a mail server 24, an
accounting server 26, a gateway 28, and a dialup server
25 30, while the parallel ISP 16 does an authentication
server 32, a mail server 34, an accounting server 36,
a gateway 38, a dialup server 40, and a domain name

0055523.071300
005170-EE255560

server (DSN) 42. Though the DSN is also included in the normal ISPs 14A, 14B, ..., it is not shown because it does not directly relate to the operation of the present invention. Each of the servers is not
5 constituted of one computer, but they can be formed of a single computer. Furthermore, the servers are not located in one place but can be arranged at remote sites and connected to one another through an exclusive line. A WWW server 18 for providing a home page is
10 also connected to the Internet 12. The WWW server 18 can be included in the providers.

An operation of the Internet according to the above embodiment will now be described.

When a user makes use of an Internet service, he
15 or she needs to contract with any of providers first. The user can make a contract with the individual ISPs 14A, 14B, 14C, ... as in the case of the prior art; however, the user makes a contract with only the parallel ISP 16 in this embodiment. By contracting
20 with only the parallel ISP 16 as described above, the user can use all access points of the individual ISPs 14A, 14B, 14C, ... with which the parallel ISP 16 is under roaming contract. For the contract with the parallel ISP 16 (online signup), the parallel ISP 16
25 also has access points exclusively for signup, though not shown. The programs for the online signup are sent to respective users by means of a media such as

00555223-071300

09555233.071300

a CD-ROM. The users perform various settings according to the programs. For example, a user inputs necessary information such as a user name, an address, a telephone number, the name of a personal computer for use, a desired user name, and a bank account. Since this information is personal secret information, it is desirable that a user can choose the Internet or mail to send the information. The signup for the parallel ISP 16 differs from an ordinary line signup in the selection of an individual ISP (one ISP 14A is selected, but it can be changed at any time) to select an access point for use in connecting with the Internet and how to determine an electronic mail address. User information such as a user ID and a password is stored in the authentication server 32.

The determination of an electronic mail address will be described with reference to FIG. 4. As is well-known, an electronic mail address is made up of both a user name (ID) and a domain name. The present invention ensures with a considerably high probability that a user name that a user wishes (usually the full name of the user) can be used as a mail address. In other words, 1296 sub-domains are made up of alphanumerics "00" to "ZZ" under the domain name "PARALLELNET.COM" so as to cope with 1296 duplicate user names. If 1296 sub-domain names are insufficient, the digits of sub-domain names have only to increase to

three to cope with 46656 duplicate user names. If the sub-domain names so increase in digit, it is possible to issue electronic mail addresses including user names that a limitless number of users desire.

5 More specifically, when an electronic mail address is registered with a provider, it is transmitted to the domain name server 42 along with a user name such as "KOJIMA". The domain name server 42 determines whether the electronic mail address adding a domain name
10 (initial value) "00.PARALLELNET.COM" to the user name "KOJIMA" has been already registered or not. If the mail address "KOJIMA@00.PARALLELNET.COM" has not yet been registered, it is done as an electronic mail address of the user, and the use is notified of this
15 address.

When the mail address "KOJIMA@00.PARALLELNET.COM" has been already registered in the domain name server 42, the server 42 determines whether an electronic mail address with the next sub-domain name
20 "01.PARALLELNET.COM" has been registered or not. If it has been done, the server 42 repeats the same determination operation for electronic mail addresses with "02.PARALLELNET.COM," "03.PARALLELNET.COM," ... in this order until a unique electronic mail address is
25 determined. A user sticks to a user name before @ (at sign) but does not care about a domain name after @ too much. With the above sub-domain name, a user does not

00555233 071300
00E77D EE255560

fail to have an electronic mail address that he or she desires.

Referring to the flowchart shown in FIG. 5, the procedure for connecting a user terminal to the Internet will now be described.

In step S2, a request to connect a user terminal (e.g., 50) to an access point (e.g., 20A₁) of a selected individual ISP (ISP 14A), is made. This request contains a connection ID and a password.

As the connection ID (account), an electronic mail address "KOJIMA@00.PARALLELNET.COM" including a domain name is used, unlike in the normal dialup connection.

In step S4, a request (connection ID, password) to connect the access point 20A₁ to the authentication server 22 of the ISP 14A, is transmitted.

In step S6, the authentication server 22 determines whether the user is a member of the parallel ISP or not according to whether the connection ID includes a suffix (a domain name "PARALLELNET.COM" in this case). If the connection ID includes no suffix, the user is a regular member of own provider and thus the authentication server 22 authenticates the user (confirms that the password is valid). If the authentication indicates NG, the processing is stopped.

If the authentication indicates OK, permission is given to the access point 20A₁ to connect the user terminal 50 thereto in step S10, and the connection of

055523.071300

the user terminal to the Internet is started and so is accounting by the accounting server 26. The user connected to the Internet 12 gains access to charge or free contents, transmits/receives an electronic mail, and does online shopping. Accounting information such as a usage charge of a network and a connection rate of connecting with a charge content, is stored in the accounting server 26. In step S12, the connection is completed, as is the accounting. The accounting information is usually collected every month, an account is issued to a user, and a charge is automatically paid from a user's bank account.

If the connection ID includes a suffix, the user is not a member of own provider but a member of the parallel ISP 16 and thus the authentication server 22 transfers a connection request (connection ID and password) to the authentication server 32 of the parallel ISP 16. This transfer is encrypted. The authentication server 32 of the parallel ISP 16 authenticates a connection request transferred from each of the individual ISPs 14A, 14B, 14C, ... and returns an authentication result to it.

In step S16, the authentication server 22 of the ISP 14A receives the authentication result. If the result is not good, the processing ends. If it is good, permission is given to the access point 20A₁ to connect the user terminal 50 thereto in step S18, and

00555233.071300

the connection of the user terminal to the Internet is started and use log data (user, use time, etc.) is recorded in the accounting server 26. If, in step S20, the connection is completed, the use log data is transferred from the accounting server 26 of the ISP 14A to the accounting server 36 of the parallel ISP 16 in step S22, and the processing ends. As described above, the individual ISPs 14A, 14B, 14C, ... charge not the user but the parallel ISP 16 for the connection fee.

The accounting server 36 of the parallel ISP 16 sums up the fees of the individual ISPs 14A, 14B, 14C, ..., charges the users for them, and collects money from the users.

In step S2, when a user makes a request to connect with an access point, the access point (individual ISP) can freely be varied at all times. If, therefore, there are no access points of the commonly-used ISP near the user when he or she is out or on business, the user can temporarily use an access point of another nearby ISP (which is under roaming contract with the parallel ISP). When the commonly-used ISP access point is busy, the use can also temporarily use another ISP access point. Moreover, the user can choose the optimum ISP in accordance with the purpose of using the Internet.

According to the present invention described

0555233.071300

above, if a user simply makes a contract with a single parallel provider which is under roaming contract in advance with a plurality of individual providers, the user can connect to the Internet selectively using access points of a number of individual providers. The user is not at a loss to find an access point everywhere in the world. The individual providers can freely be selected and thus the optimum provider can be selected in accordance with the purpose of using the Internet, the busy condition of lines of the providers, and the like, which is economical. Since, furthermore, the user contracts with only the parallel provider, he or she need not manage a plurality of accounts or a plurality of e-mail addresses but can do the e-mail in a unified manner. In order to avoid the duplicate user names in determining an electronic mail address, a number of sub-domain names are prepared and one of them can be added to a domain name. In most cases, a user can have an electronic mail address including a user name that the user wishes.

The present invention is not limited to the above embodiment described above, but various changes and modifications can be made. For example, the network of the present invention is not limited to the foregoing system.

According to the present invention described above, there can be provided a network system in which

0555233-071300

a user is able to connect with a network selectively using access points of a number of Internet service providers only if the user makes a contract with one Internet service provider.

5 According to the present invention, there can be provided an Internet connection apparatus capable of connecting with a network by performing user authentication even at the request of not only a regular user contracting with a provider but also a user contracting
10 with another provider cooperating with the provider of the regular user.

 According to the present invention, there can be provided an electronic mail address determination system capable of providing a user with an electronic
15 mail address including a user name as the user wishes.

 Additional advantages and modifications will readily occur to those skilled in the art. Therefore, the invention in its broader aspects is not limited to the specific details and representative embodiments
20 shown and described herein. Accordingly, various modifications may be made without departing from the spirit or scope of the general inventive concept as defined by the appended claims and their equivalents.

09555233.071300

WHAT IS CLAIMED IS:

1. A network system comprising a plurality of individual service providers each having access points, and a parallel service provider connected to the plurality of individual service providers and including an authentication server,

wherein when the access point of the individual service providers receives a connection request from a user who contracts with the parallel service provider, the providers cause the authentication server to perform user authentication and connect the user to a network through the access point in accordance with a result of the authentication.

2. The network system according to claim 1, wherein the user who contracts with the parallel service provider sends a connection request containing a domain name of the parallel service provider to the access point, and the access point determines whether the user contracts with the parallel service provider in accordance with presence or absence of the domain name.

3. The network system according to claim 1, wherein the parallel service provider is connected to the plurality of individual service providers through an exclusive line.

4. The network system according to claim 1, wherein the plurality of individual service providers

09555233.071300

send respective user connection recordings to the parallel service provider.

5. A network connecting method comprising:

5 sending a connection request from a user to an access point of any one of a plurality of individual service providers;

10 determining by the access point whether the user is a member of an individual service provider including the access point or a member of a parallel service provider that contracts with the plurality of individual service providers;

15 executing user authentication processing by the access point itself when the user is a member of the individual service provider, and connecting the user to a network in accordance with a result of the authentication processing; and

20 causing the parallel service provider to execute user authentication processing when the user is a member of the parallel service provider, and connecting the user to the network in accordance with a result of the authentication processing.

25 6. The network connecting method according to claim 5, wherein the user who contracts with the parallel service provider sends a connection request containing a domain name of the parallel service provider to the access point, and the access point determines whether the user contracts with the parallel

00555233.071300

service provider in accordance with presence or absence of the domain name.

7. The network connecting method according to claim 5, wherein the plurality of individual service providers send respective user connection recordings to the parallel service provider.

8. An electronic mail address determination system comprising:

means for, when a user name is input, determining whether an electronic mail address including a combination of the user name and any one of a plurality of predetermined sub-domains has been registered; and

means for, when the electronic mail address has been registered, determining an electronic mail address including a combination of the user name and another sub-domain has been registered, whereby setting an electronic mail address and including a combination of a sub-domain not registered and a user name.

9. A network connection device comprising:

means for, when a connection request is issued from a user, determining whether the user is a regular member of a provider with which the user contracts or a partnership member under a given contract with the provider;

means for, when the user is a regular member, executing user authentication processing and connecting the user to a network in accordance with a result of

09555233.071300

the authentication processing; and

means for, when the user is a partnership member, transferring a connection request to a specified authentication server, and executing user authentication processing and connecting the user to the network in accordance with a result of the authentication processing.

10. The network connection device according to claim 9, wherein the partnership member inserts a predetermined domain name in the connection request, and the determining means determines whether the user is the partnership member in accordance with presence or absence of the domain name in the connection request.

11. The network connection device according to claim 9, wherein the specified authentication server is connected to network connection devices of a plurality of companies and used in common.

00555233-071300

ABSTRACT OF THE DISCLOSURE

A network system includes a plurality of individual Internet service providers each having access points, and a parallel Internet service provider connected to the plurality of individual Internet service providers, the individual Internet service providers and the parallel Internet service provider each include an authentication server. When the access point of a provider receives a connection request from a user who contracts with the parallel service provider, the provider transfers a connection ID and a password to an authentication server of the parallel Internet service provider to perform user authentication. When a result of the authentication is good, the user terminal is connected to the user terminal through the access point.

09555233.071300

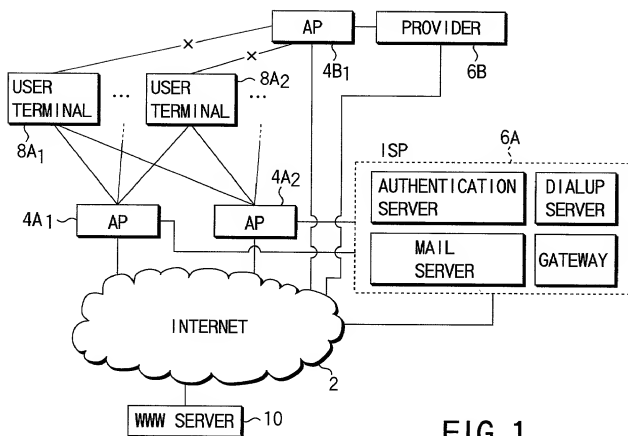


FIG. 1

FIG. 2

X02AT4375@PATENT.COM

KOJIMA@00.PARALLELNET.COM

KOJIMA@01.PARALLELNET.COM

FIG. 4

KOJIMA@99.PARALLELNET.COM

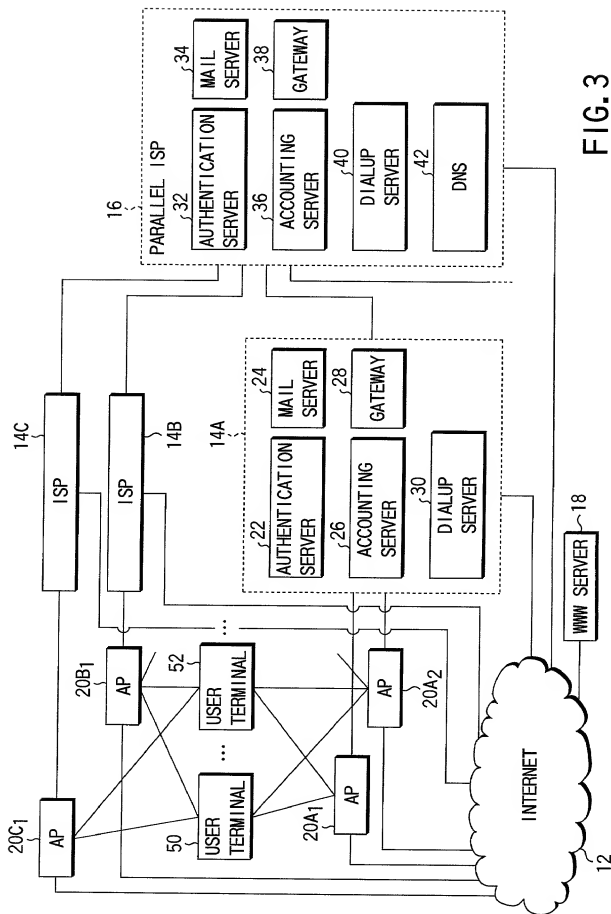


FIG.3

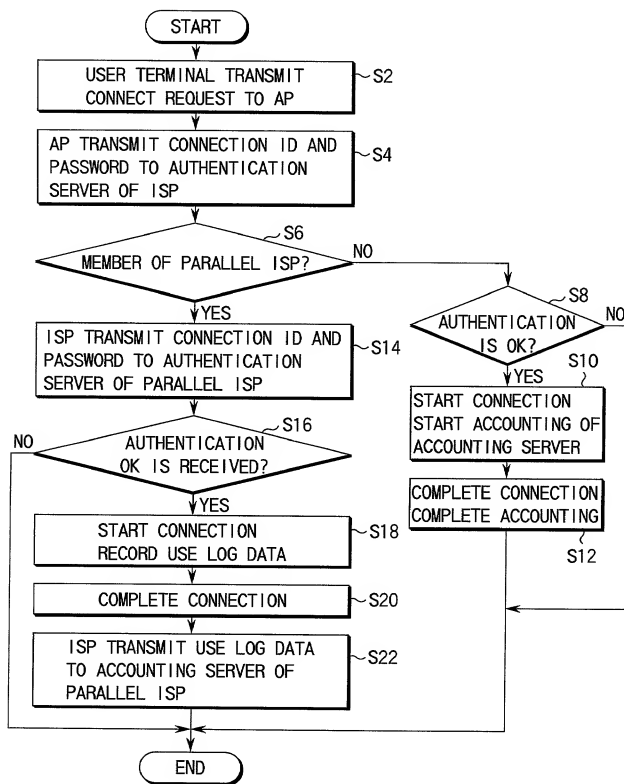


FIG. 5

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Japanese Language Declaration

(日本語宣言書)

私は、合衆国法典第35編第119条(a)－(d)項又は第365条(b)に基づき下記の、米国以外の国の少なくとも一カ国を指定している特許協力条約365(a)項に基づく国際出願、又は外国での特許出願もしくは発明者証の出願についての外国優先権をここに主張するとともに、優先権を主張している、本出願の前に出願された特許または発明者証または外国出願を以下に、枠内をマークすることで、示しています。

I hereby claim foreign priority under Title 35, United States Code, Section 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application(s) which matured at least one claim in the United States, at the invention(s) listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

外国での先行出願

10-274082

(Number)
(番号)

JAPAN

(Country)
(国名)

28/09/1998

(Day/Month/Year Filed)
(出願年月日)

Priority Not Claimed

優先権の主張なし

☐☐☐☐

私は、第35編米国法典119条(e)項に基いて下記の
米特許出願規定に記載された権利をここに主張いたします。

I hereby claim the benefit under Title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below

(Application No.)
(出願番号)

(Filing Date)
(出願日)

(Application No.)
(出願番号)

(Filing Date)
(出願日)

米特許 2 米輸出日6て
米特許 2 米輸出日6て
記しを1する提書提出
てして張3先出国報7情
に指定に第で米条3な
0米を国法行先給貴重
に指し米特許され
1は権が是れ現開す
2米利米れそれと
5く内規限ら達無て
3利基に約る國たの勝
3米にの約る國たの勝
法れたる力米日た習を
米載を請められの手特と
水載を請められの手特と
記しを1する提書提出
下顧し又にも期業務
は特許を輸出で定業務
國特許を輸出で定業務

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) or 365(c) of any PCT international application designating the United States, listed below and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT Information application in the manner provided by the first paragraph of Title 35, United States Code, Section 112. I acknowledge the duty to disclose information on which is material to patentability, as defined in 37 C.F.R. 1.56 of Federal Regulations, Section 36 which become available between the filing date of the prior application and the national or PCT international filing date of application:

PCT/JP99/05290

September 28, 1999

Pending

(Application No.)
(出願番号)

(Filing Date)
(出願日)

(Status: Patented, Pending, Abandoned)
(現況: 特許許可済、係屬中、放棄済)

(Application No.)
(出題番号)

(Filing Date)
(出願日)

(Status: Patented, Pending, Abandoned)
(現況: 特許許可済、係屬中、放棄済)

私は、私自身の知識に基づいて本宣言書中で私が行う表明が真実であり、かつ私の入手した情報と私の信じていることに基き、よく表明が全て真実であると信じていること、さらに故意に与えられた虚偽の表明及びそれと同等の行為は米国の法律典第18編第1001条に基づき、罰金または拘禁、もしくはその両方により処罰されること、そしてそのような故意による虚偽の声明を行なえば、出願した、又は既に許可された特許の有効性が失われることを認識し、よってここに上記のごとく虚偽を致し、ます。

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code. I understand that such false statements may jeopardize the validity of the application for any patent issued thereon.

Declaration Power of Attorney For Patent Application

特許出願宣言書及び委任状

Japanese Language Declaration

日本語宣言書

下記の氏名の発明者として、私は以下の通り宣言します。

As a below named inventor, I hereby declare that:

私の住所、私書箱、国籍は下記の私の氏名の横に記載された通りです。

My residence, post office address and citizenship are as stated below next to my name.

下記の名称の発明に関して請求範囲に記載され、特許出願している発明内容について、私が最初かつ唯一の発明者（下記の氏名が一つの場合）もしくは最初かつ共同発明者であると（下記の名称が複数の場合）信じています。

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

ネットワークシステム

NETWORK SYSTEM

上記発明の明細書（下記の欄で×印がついていない場合は、本書に添付）は、

The specification of which is attached hereto unless the following box is checked:

☐ 月 日に

☒ was filed on 6/23/2000
as United States Application Number or
PCT International Application Number

提出され米国出願番号または特許協定条約

09/555,233

国際出願番号を _____ とし、

and was amended on _____

（該当する場合） _____ 月 _____ 日に訂正されました。

（if applicable）.

私は、特許請求範囲を含む上記訂正後の明細書を検討し、内容を理解していることをここに表明します。

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

私は、連邦規則法典第37編第1条56項に定義されるとおり、特許資格の有無について重要な情報を開示する義務があることを認めます。

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56

Japanese Language Declaration

(日本語宣言書)

委任状: 私は、下記の発明者として、本出願に関する一切
の手続きを米特許商標局に対して遂行する弁理士または代理
人として、下記の者を指名いたします。
(弁理士、または代理人の氏名及び登録番号を明記のこと)

POWER OF ATTORNEY: As a named inventor, I
hereby appoint the following attorney(s) and/or
agent(s) to prosecute this application and transact
all business in the Patent and Trademark Office
connected therewith (list name and registration
number)

3 And I hereby appoint Henry A. Marzullo, Jr. (Reg. No. 20,910), Howard
N. Aronson (Reg. No. 27,302) and Myron Greenspan (Reg. No. 25,680), each
of whose address is Lackenbach Siegel Building, One Chase Road,
Scarsdale, N.Y. 10583, or any one of them, my attorneys with full power
of substitution and revocation, to prosecute this application and to
transact all business in the Patent and Trademark Office connected
therewith, and request that correspondence be directed to Lackenbach
Siegel Marzullo Aronson & Greenspan, P.C., Lackenbach Siegel Building,
One Chase Road, Scarsdale, N.Y. 10583.

書類送付先:

Send Correspondence to
Lackenbach Siegel Marzullo
Aronson & Greenspan, P.C.
Lackenbach Siegel Building,
One Chase Road,
Scarsdale, N.Y. 10583

直通電話連絡先:

Direct Telephone Calls to: (name and telephone number)
Telephone No. (914) 723-4300
Facsimile No. (914) 725-5674

唯一のまたは第一発明者の氏名	Full name of sole or first inventor
小島 章利	Akitoshi Kojima
同発明者の署名 日付 小島章利 June 29, 2000	Inventor's signature Date
住所 日本国宇都宮市	Residence Utsunomiya-shi, Japan JP X
国籍 日本	Citizenship JAPAN
郵便の宛先 〒320-8528 日本国栃木県宇都宮市星が丘2丁目1番8号	Post Office Address c/o KOJIMA CO., LTD.
株式会社コジマ内	1-8, Hoshigaoka 2-chome, Utsunomiya-shi, Tochigi 320-8528 Japan

(第二以降の共同発明者に対しても同様に記載し、署名を
すること。)

(Supply similar information and signature for second
and subsequent joint inventors.)